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EXAMINER

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ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,599

Applicant(s)

PUPPIN, GIUSEPPE

Examiner

Gladys J Piazza Corcoran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

FINAL ACTION

Specification

1. The disclosure is objected to because of the following informalities: The status of the Applications cited in the Specification (for example on pages 1 and 3) should be updated.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 41-54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant amended claim 41, line 2 to recite "said structure including a rigid, coextensive thermoplastic-fabric composite"; claim 41 line 6 to recite "said rigid thermoplastic to create a coextensive composite"; claim 45, line 1 to recite "a hinged, coextensive composite structure"; and claim 51, line 4 to recite "at least two pre-determined rigid areas of coextensive thermoplastic coated fabric composite." There is no support in the Specification (even if looked at as a whole) for a coextensive

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thermoplastic coated fabric composite. In fact, all the embodiments described in the specification include at least two separate areas of rigid thermoplastic applied to the fabric and a hinged area where no rigid thermoplastic is provided, or a different flexible thermoplastic is provided on the hinged area. Thus, the thermoplastic can not be coextensive with the fabric because there are at least two separate areas of thermoplastic that contact the fabric.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 41-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Applicant amended claim 41, line 2 to recite "said structure including a rigid, coextensive thermoplastic-fabric composite"; claim 41 line 6 to recite "said rigid thermoplastic to create a coextensive composite"; claim 45, line 1 to recite "a hinged, coextensive composite structure"; and claim 51, line 4 to recite "at least two pre-determined rigid areas of coextensive thermoplastic coated fabric composite." It is unclear how the thermoplastic coated fabric can be coextensive when at least two areas of thermoplastic contact the fabric and a hinged area without thermoplastic is present.

7. As set forth in paragraph 3 of the prior Office Action filed October 8, 2003, Claim 41 is unclear by reciting a step of extruding rigid thermoplastic onto at least two predetermined areas of said fabric and then reciting a separate step of coating said pre-determined areas with rigid thermoplastic to create a composite. It is unclear as to

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whether the same thermoplastic is extruded and coated onto the pre-determined areas or one thermoplastic is extruded onto the areas and then a separate thermoplastic is extruded onto the areas. The specification recites that only one rigid thermoplastic is extruded and coated onto the pre-determined areas where the extrusion step coats the fabric (see for example, page 7, lines 27-31; page 19, lines 29-31; page 20, lines 16-19; page 21, lines 20-23). It is suggested to amend the claim to clarify that the rigid thermoplastic is extrusion coated on the predetermined areas such as by amending claim 41, line 5 to recite --fabric, thus coating said predetermined areas with said rigid thermoplastic to create a composite--.

8. As set forth in paragraph 4 of the prior Office Action filed October 8, 2003, Claim 42 is unclear by reciting a step of extruding flexible thermoplastic upon said hinged region, while claim 41 (from which 42 depends) recites that the pre-determined areas are separated by a linear flexible hinged region free of thermoplastic. It is unclear how the hinged area free of thermoplastic can have a step of extruded thermoplastic on the area and still have the limitation of the hinged area being free of thermoplastic. It is suggested to amend claim 41 to recite in line 9 --of said rigid thermoplastic--.

9. Claim 45 is unclear by reciting the limitation "a polymer composition" in line 10 after reciting that a rigid thermoplastic is introduced into a co-extruder. It is unclear as to whether the polymeric composition is the rigid thermoplastic or a separate polymeric composition. It is suggested to amend the claim to recite --a polymer composition of the at least one rigid thermoplastic--.

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10. Claim 46 recites the limitation "said hinged regions" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. The newly amended claim 45 now recites in line 6, "at least one hinged region", but does not positively recite "regions", therefore it is unclear whether Applicant intends to be limited to at least one hinged region or more than one hinged region. It is suggested to amend to --said at least one hinged region--. It is also suggested to amend claim 49, line 1 to recite --said at least one hinged region-- in order to be consistent.

11. Claim 48 recites the limitation "said hinged regions" in line 2 and in lines 3-4. There is insufficient antecedent basis for this limitation in the claim. The newly amended claim 45 now recites in line 6, "at least one hinged region", but does not positively recite "regions", therefore it is unclear whether Applicant intends to be limited to at least one hinged region or more than one hinged region. It is suggested to amend to --said at least one hinged region--. It is also suggested to amend claim 49, line 1 to recite --said at least one hinged region-- in order to be consistent.

12. As set forth in paragraph 15 of the prior Office Action filed October 8, 2003, Claim 51 recites the limitation "said hinged regions" in line 9. There is insufficient antecedent basis for this limitation in the claim. The claim 51 recites in line 5, "at least one flexible hinged region", but does not positively recite "regions", therefore it is unclear whether Applicant intends to be limited to at least one hinged region or more than one hinged region. It is suggested to amend to --said at least one flexible hinged region--.

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13. As set forth in paragraph 16 of the prior Office Action filed October 8, 2003, Claim 52 recites the limitation "said hinged fabric regions" in line 2. There is insufficient antecedent basis for this limitation in the claim. The claim 51 recites in line 5, "at least one flexible hinged region", but does not positively recite "regions", therefore it is unclear whether Applicant intends to be limited to at least one hinged region or more than one hinged region. It is suggested to amend to --said at least one flexible hinged region--.

14. As set forth in paragraph 17 of the prior Office Action filed October 8, 2003, Claim 53 recites the limitation "said hinged regions" in line 1. There is insufficient antecedent basis for this limitation in the claim. The claim 51 recites in line 5, "at least one flexible hinged region", but does not positively recite "regions", therefore it is unclear whether Applicant intends to be limited to at least one hinged region or more than one hinged region. It is suggested to amend to --said at least one flexible hinged region is--.

15. As set forth in paragraph 18 of the prior Office Action filed October 8, 2003, Claim 52 is unclear by reciting a step of co-extruding flexible thermoplastic upon said hinged region, while claim 51 (from which 52 depends) recites that the pre-determined areas are separated by a flexible hinged region free of thermoplastic. It is unclear how the hinged area free of thermoplastic can have a step of extruded thermoplastic on the area and still have the limitation of the hinged area being free of thermoplastic. It is suggested to amend claim 51 to recite in line 6, --said rigid thermoplastic--.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

17. Claims 41, 44, 51 are rejected under 35 U.S.C. 102(e) as being anticipated by Hettinga (US Patent No. 5,945,053) as set forth in paragraph 20 of the prior Office Action filed October 8, 2003.

Applicant has newly amended claim 41 and 51 to include “a coextensive composite” and “coextensive thermoplastic coated fabric composite” respectively. As discussed above, such new limitations are considered new matter and unclear. Consequently, the reference Hettinga is considered to meet the limitations of the claims as the composite in Hettinga is considered to be just as coextensive as Applicant's disclosed invention.

Hettinga discloses a method of making a hinged composite structure by introducing fabric (18) to the interior of an extrusion die (10), extruding rigid thermoplastic (extrusion material; column 3, lines 3-5) onto at least two predetermined areas of the fabric (column 4, lines 30-40), coating the pre-determined areas with rigid thermoplastic to create a composite (first and second members 38 and 40), and where

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the pre-determined areas are separated by a linear flexible hinged region free of thermoplastic (column 4, lines 30-40). As to claim 44, the composite is drawn through a shaping die after coating where pre-determined portions of the first and second rigid areas are made non-coplanar (the composite is forced through the extrusion cavity where mandrels 30, and 32 have tapered ends that produce non-coplanar areas of the rigid areas; column 4, lines 55-62). As to claim 51, the pre-determined rigid areas are separated by at least one flexible hinged region free of thermoplastic (column 4, lines 30-40), the composite is removed from the extrusion die (column 3, lines 15-20), cooled (allows to cool at room temperature), and the rigid areas are rotated relative to each other about the hinged regions to form the profile (column 5, lines 5-10, 29-30).

18. Claims 41, 42, 51, 52 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaplo (US Patent No. 6,294,729) as set forth in paragraph 21 of the prior Office Action filed October 8, 2003.

Applicant has newly amended claim 41 and 51 to include “a coextensive composite” and “coextensive thermoplastic coated fabric composite” respectively. As discussed above, such new limitations are considered new matter and unclear. Consequently, the reference Kaplo is considered to meet the limitations of the claims as the composite in Kaplo is considered to be just as “coextensive” as Applicant’s disclosed invention.

Kaplo discloses a method of making a hinged composite structure by introducing fabric (fabric 20) to the interior of an extrusion die (die 44), extruding rigid thermoplastic (column 2, lines 50-55) onto at least two predetermined areas of the fabric (see figures),

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coating the pre-determined areas with rigid thermoplastic to create a composite (see figures), and where the pre-determined areas are separated by a linear flexible hinged region free of thermoplastic (hinge area 126 is free of the more rigid thermoplastic material).

As to claim 42, flexible thermoplastic is extruded onto the hinged region (area 126). As to claim 51, the pre-determined rigid areas are separated by at least one flexible hinged region free of thermoplastic (hinge area 126 is free of the more rigid thermoplastic material), the composite is removed from the extrusion die and cooled (allows to cool at room temperature), and the rigid areas are rotated relative to each other about the hinged regions to form the profile (the hinge area allows the rigid areas to be rotated about the hinged regions). As to claim 52, flexible thermoplastic is extruded onto the hinged region (area 126).

19. Claim 45 is rejected under 35 U.S.C. 102(b) as being anticipated by Kohl (US Patent No. 4,788,088) as set forth in paragraph 22 of the prior Office Action filed October 8, 2003.

Applicant has newly amended the preamble in claim 45 to include "hinged, coextensive composite structure." As discussed above, such newly added limitation is considered new matter and unclear. Consequently, the reference Kohl is considered to meet the limitations of the claims as the composite in Kohl is considered to be just as coextensive as Applicant's disclosed invention.

Applicant has also added the limitation to claim 45 that the hinged composite includes at least one hinged region. Kohl discloses at least one hinged region in the composite (for example, 118 see figure 9b and 152 figure 12c).

Kohl discloses a method for making a hinged composite structure by introducing glass fabric (column 7, lines 41, 42, 55) into a shaping station (mandrel 32) including a shaping block to produce a pre-formed fabric shape conforming to the shape of the hinged composite, introducing at least one rigid thermoplastic into a co-extruder having inlet zones and combining zones wherein the thermoplastic and pre-formed shaped fabric are combined to form the composite structure under conditions of sufficient pressure, temperature and shear to cause the polymer composition to penetrate and wet individual glass fibers to the extent that the polymer composition substantially coats the glass fibers in the glass fabric (column 5, lines 35-45), extruding the thermoplastic fabric composite through a shaping die to form the structure wherein the properties of the rigid areas (45-55) comprise a modulus of elasticity of about 830 kpsi or greater, a coefficient of thermal expansion of about 0.000022 in/in/F or less, a shrinkage not exceeding about 0.28%, and an impact of about 10 in-lbs or greater (Kohl discloses the same products (column 3, lines 55-68), the same materials and the same methods as Applicant, therefore it is considered the areas have the same properties).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 42, 52, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hettinga (US Patent No. 5,945,053) as applied to claim 41 above and further in view of Bemis (US Patent No. 4,769,199) and/or Kaplo (US Patent No. 6,294,729) as set forth in paragraph 24 of the prior Office Action filed October 8, 2003.

The method of Hettinga leaves the fabric hinged portion free of thermoplastic. However, it is known in the art to apply flexible thermoplastic to hinged portions of fabric hinges in order to provide a more stable, flexible hinge. For example, Bemis and/or Kaplo both show examples of method of providing a more flexible thermoplastic in the hinged region. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the hinge region of the composite in Hettinga with a flexible thermoplastic in order to provide a flexible stable hinge area as exemplified by Bemis and/or Kaplo, only the expected results would be attained.

22. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohl (US Patent No. 4,788,088) as applied to claim 45 above as set forth in paragraph 25 of the prior Office Action filed October 8, 2003.

It appears as discussed above that the rigid areas in Kohl would have the same properties as claimed by applicant. Additionally, it would have been well within the purview of one of ordinary skill in the art to select the appropriate properties required for the final product, particularly since Kohl discloses producing the same products as Applicant (column 3, lines 55-68), using the same materials as Applicant, and using the same method as Applicant. It would have been obvious to one of ordinary skill in the art

at the time of the invention to provide the method of producing a composite as shown by Kohl by providing the composite with the requisite properties for the particular end product as is well within the purview of one of ordinary skill in the art, only the expected results would be attained.

23. Claims 41-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bemis (US Patent No. 4,769,199) in view of Van Vliet (US Patent No. 2,607,411) and Shanok et al. (US Patent No. 3,245,864) as set forth in paragraph 26 of the prior Office Action filed October 8, 2003.

Applicant has newly amended claim 41, 45 and 51 to include “a coextensive composite; “hinged, coextensive composite structure”; and “coextensive thermoplastic coated fabric composite” respectively. As discussed above, such new limitations are considered new matter and unclear. Consequently, the references Bemis in view of Van Vliet and Shanok et al. are considered to meet the limitations of the claims as the composite in Bemis in view of Van Vliet and Shanok et al. is considered to be just as coextensive as Applicant’s disclosed invention.

Applicant has also added the limitation to claim 45 that the hinged composite includes at least one hinged region. The references as discussed below discloses at least one hinged region in the composite.

Bemis discloses a method of making a hinged structure by extruding rigid thermoplastic into at least two predetermined areas separated by a hinged region free of the rigid thermoplastic. It is known in the art as exemplified by Van Vliet to reinforce plastic hinges with a fabric material in order to limit the stretch of the hinge member

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without reducing its flexibility (column 2, lines 1-10). It is also known in the art as exemplified by Shanok to encase a fabric layer with an extruded thermoplastic layer by introducing the fabric to the interior of an extrusion die, and extruding the thermoplastic to coat the fabric. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of extruding a thermoplastic hinge as shown by Bemis with a fabric reinforcement in order to limit the stretch of the hinge member without reducing its flexibility as shown by Van Vliet particularly since it is known how to extrude thermoplastic material around a fabric web as shown by Shanok.

As to claim 42, Bemis discloses extruding flexible thermoplastic on the hinged region (15). As to claim 43, Shanok discloses prefolding/preshaping the fabric web prior to introducing into the extruding die in order to form a strip with out wrinkling and Bemis discloses a folded shaped hinge, therefore one practicing the method of Bemis in view of Van Vliet and Shanok would fold the fabric layer edge prior to combining with the thermoplastic. As to claim 44, the hinge member in Bemis is drawn through a shaping die(calibration station 32) after extruding (which is the coating step in view of Van Vliet and Shanok) where predetermined portions of the first and second areas are made non-coplanar (the side areas of the hinge are not coplanar to each other and are shaped in the calibration station; column 4, lines 51-68). As to claim 45, although the references do not specifically disclose the type of fabric used in the hinge, it is well known to use glass fabric for reinforcing plastic structures and it would have been well within the purview of one of ordinary skill in the art to select such a well known and commonly used fabric, only the expected results would be attained. Additionally, Shanok discloses

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introducing the fabric into a shaping station block to produce a pre-formed fabric shape conforming to the shape of the structure (column 4, lines 30-53). Bemis discloses introducing at least one rigid thermoplastic into a co-extruder having inlet zones and combining zones where the thermoplastic is extruded, and Shanok discloses combining the fabric and thermoplastic to form the composite structure under conditions of sufficient pressure, temperature and shear to cause the polymer to penetrate and wet the individual fibers to coat the fabric, and the composite is extruded through a shaping die. As to the particular properties of the rigid areas, it would have been well within the purview of one of ordinary skill in the art to select the appropriate properties required for the final product, particularly since the references disclose producing the same products as Applicant, using the same materials as Applicant, and using the same method as Applicant. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of producing a composite as shown by Kohl by providing the composite with the requisite properties for the particular end product as is well within the purview of one of ordinary skill in the art, only the expected results would be attained. As to claim 46, Bemis discloses extruding flexible thermoplastic on the hinged region (15). As to claim 47, Shanok discloses prefolding/preshaping the fabric web prior to introducing into the extruding die in order to form a strip with out wrinkling and Bemis discloses a folded shaped hinge, therefore one practicing the method of Bemis in view of Van Vliet and Shanok would fold the fabric layer edge prior to combining with the thermoplastic. As to claim 48, Bemis discloses extruding flexible thermoplastic on the hinged region (15) and Shanok discloses extruding the

thermoplastic at sufficient temperature and pressure in order to bond the thermoplastic to the fabric layer. As to claim 49, the references Van Vliet and Shanok disclose the fabric in the hinged region is incorporated within the thermoplastic material. As to claim 50, Shanok discloses prefolding/preshaping the fabric web prior to introducing into the extruding die in order to form a strip with out wrinkling and Bemis discloses the edges of the hinge are folded inward, therefore one practicing the method of Bemis in view of Van Vliet and Shanok would fold the fabric layer edge prior to combining with the thermoplastic. As to claim 51, Bemis discloses the pre-determined rigid areas are separated by at least one flexible hinged region free of thermoplastic (hinge area 15 is free of the more rigid thermoplastic material), the composite is removed from the extrusion die and cooled (cooling station 33), and the rigid areas are rotated relative to each other about the hinged regions to form the profile (the side walls are rotatable about the hinged areas, see figure 1). As to claim 52, Bemis discloses extruding flexible thermoplastic on the hinged region (15). As to claim 53, the references Van Vliet and Shanok disclose the fabric in the hinged region is incorporated within the thermoplastic material. As to claim 54, Shanok discloses prefolding/preshaping the fabric web prior to introducing into the extruding die in order to form a strip with out wrinkling and Bemis discloses the edges of the hinge are folded inward, therefore one practicing the method of Bemis in view of Van Vliet and Shanok would fold the fabric layer edge prior to combining with the thermoplastic.

Response to Arguments

24. Applicant's arguments filed February 5, 2004 have been fully considered but they are not persuasive.

Applicant argues on page 5 that Step b of claim 41 recites that a rigid thermoplastic is extruded onto at least two-predetermined areas of said fabric and by forcing the rigid thermoplastic through a shaping die, this rigid thermoplastic then coats and impregnates the pre-determined areas as recited in step c. As discussed above, throughout the specification, the extrusion step is the coating step; there is no additional coating step. Therefore the claims are unclear as presently written.

Applicant argues on page 6 that claim 42 is simply an additional step to utilize an embodiment of the instant invention with a hinged region coated with flexible thermoplastic and that the second extrusion is necessitated by the fact that the hinged region requires flexible thermoplastic in contrast to the rigid thermoplastic extrusion of claim 41. As discussed above, the claim 42 is unclear because the claim 41 requires that the hinged region be free of "thermoplastic" and then claim 42 recites extruding "flexible thermoplastic" on the hinged area. It is suggested to amend claim 41 to recite that the hinged region is free of "said rigid thermoplastic".

Applicant argues on page 7 that the prior art does not show a composite structure having a fabric polymer composite areas connected by a fabric hinge with the fabric coextensive from the composite through the hinge areas and that the amendments make it clear that the same fabric layer or layers are used in both the composite and in the hinge. It is firstly noted that the amendments to the claims do not

provide the limitations that the fabric is coextensive from the composite through the hinge areas and that the same fabric layer or layers are used in both the composite and in the hinge. Even if they did, the references do show the use of the same fabric through the hinged area. Finally, as discussed above, the amendments that Applicant added to the claims of a coextensive composite are not described in the Specification and also are unclear.

Applicant argues on page 8 that the claims have glass fabric and rigid thermoplastic resin combined throughout the structure except for the limited hinge region to form the coextensive composite material in which the fabric is part of a composite in the major part of the structure. Applicant further argues that the fabric in Hettinger does not provide reinforcement to the thermoplastic resin and does not disclose the reinforcing nature of the fiber coextensive with the thermoplastic materials. It is firstly noted that claims 41, 44, and 51 do not require the use of a glass fabric. The claims also do not require that the glass fabric and rigid thermoplastic resin are combined throughout the structure except for the limited hinge region to form the coextensive composite material in which the fabric is part of a composite in the major part of the structure or that the fabric provides reinforcement to the thermoplastic resin. The claims currently only recite that the composite is coextensive, however as discussed above, it is unclear how the composite can be coextensive if the claims also require that two areas of thermoplastic are present and separated by a hinge area free from thermoplastic. Therefore, as discussed above, the reference Hettinger meets the limitations as currently recited and are coextensive in the same manner as Applicant's.

Applicant argues on page 9 that Kaplo does not disclose glass fabric and that the claims use solely glass fabric. Claims 41, 42, 51 and 52 do not require glass fabric, let alone solely glass fabric.

Applicant argues on page 9 that Kaplo discloses a fabric exterior to the thermoplastic resin and that the resin does not penetrate the fibers of the metallized fabric. The claims 41, 42, 51 and 52 do not require that the resin penetrate the fibers of the fabric.

Applicant argues on page 9 and 11 that the Kohl reference does not disclose a hinge. Applicant has added the limitation to claim 45 that the hinged composite includes at least one hinged region. Kohl discloses at least one hinged region (bends) in the composite (for example, 118 see figure 9b and notches 152 figure 12c).

Applicant argues on page 10 that the combination of Hettinga, Bemis and/or Kaplo does not suggest a composite with a fabric hinge, the fabric being coextensive with the composite regions and the hinge. As discussed above, the hinge in Hettinga is clearly fabric. As discussed above the limitation added to the claim of the composite being coextensive is not described in the specification and is also unclear. Furthermore, the claims do not recite that the fabric is coextensive with composite regions and the hinge.

Applicant argues on page 10 that the Bemis reference is non-analogous art, because the instant claims relate to methods to produce structural fenestration units such as windows and doors for residential and commercial architecture while Bemis is in the furniture industry. Applicant further argues on page 10 that Bemis does not

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discloses fabric reinforcement throughout the structure. The claims do not recite methods of producing structural fenestration units, nor do they require that the fabric reinforcement is throughout the structure. Furthermore, the reference Hettinger is directed to forming fabric hinges while the references Bemis and/or Kaplo are cited as examples in the art of showing that it is known to provide flexible thermoplastic in the hinge portion of hinges in general.

Applicant argues on page 11 that the references Hettinga and Kaplo do not recite glass fabric. Claims 42, 52 and 53 do not require glass fabric.

Applicant argues on page 12 that the Kohl reference fails to teach or suggest the properties of the rigid covered areas. As discussed above, the rigid areas in Kohl would have the same properties as claimed by applicant as Kohl discloses forming the same product with the same materials and the same method. Additionally, it would have been well within the purview of one of ordinary skill in the art to select the appropriate properties required for the final product, particularly since Kohl discloses producing the same products as Applicant (column 3, lines 55-68), using the same materials as Applicant, and using the same method as Applicant, only the expected results would be attained.

Applicant argues on page 12 that Van Vliet is not analogous art as it teaches a hinge system for refrigerated cabinets and is not within the field of producing structural fenestration units such as windows and doors for residential and commercial architecture and further that there is no motivation to combine the references. The claims do not require producing structural fenestration units such as windows and doors

for residential and commercial architecture. Furthermore, the reference Bemis discloses a method of forming a hinged structure while Van Vliet is cited to show that it is known in the art of forming hinged structures to reinforce the structures with fabric material in order to limit the stretch of the hinged member without reducing its flexibility. Therefore, the art is analogous and there is motivation.

Conclusion

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gladys J Piazza Corcoran whose telephone number is

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(571) 272-1214. The examiner can normally be reached on M-F 8am-5:30pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Gladys JP Corcoran
Examiner
Art Unit 1733

GJPC